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SOME REMARKS ON CONGENITAL CATARACTS.

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It is a strange fact that a great many children are yearly entered as pupils in the different schools and asylums for the blind, which by an operation may be rendered seeing and useful members of the human society. Yet, the few of these institutions which I had occasion to see and examine have proved this to be a fact. Most of these operable cases are cases of so-called congenital cataracts, and the majority of them seem to be cases of zonular cataracts. From the rules which usually prevent pupils from entering schools of the blind until they have reached a certain age, it follows that most of such cases seen in these schools are no longer infants, sometimes they are even adults. The cases of congenital cataract we occasionally see in private practice are different in this point, as they usually are brought on at an early age. Even in private practice, however, these patients have sometimes attained a considerable age before coming for an operation, either because the cataract is a progressive one, or because they finally find too much trouble in following their vocation with what little vision they possess.

Although of late a number of authors contend that there

is no such thing as an *amblyopia ex anopsia*, the experience with cases of congenital cataracts, I think, proves it undoubtedly to exist. When, for instance, as I have seen it, V is only, perhaps, $6/\infty$ right after recovery from the operation and increases in the following steadily up to say $20/x_1$, there has clearly existed in such an eye an *amblyopia ex anopsia*. I think, therefore, the earlier such children are operated upon the better, and every school for the blind should see that all applicants are carefully examined and operated upon, if some result may be expected from an operation, by competent oculists, before being accepted as pupils. The value of such a law is evident. Not only would it render the operable individuals as early as possible seeing citizens, but it would thereby remove a considerable percentage of the pupils from blind schools and thus save unnecessary expense to the community, or at least make room for more really and incurably blind individuals to be taken care of. These sentences may be considered truisms, yet, although not containing anything new, I think them worthy of reiteration, until they have produced a practical effect. It has been my experience that not only are such operable cases admitted to schools for the blind without hesitation and kept there, but there exists even, often in my experience, a certain hesitation in allowing such pupils to be operated upon, when I think the community should *insist* upon its being done. This hesitation I could never understand, except in the case of those institutions which are supported solely or almost so by the work of their pupils. Here the anxiety to lose a certain percentage of workers every year can explain it. In the institutions which are supported by the government, state or community there can be no pardonable reason for it, unless it be a doubt in the possibility of a successful operation. Where there is such a doubt it should be removed by the diffusion of knowledge by teaching the public what can and ought to be done in such cases.

In the following I wish to consider shortly the different forms of congenital cataracts in their clinical aspects and give the results of my own experiences with them.

What do we call congenital cataracts? As yet the question is a mooted one, whether congenital cataracts really exist or not. Some authors doubt the fact that children are ever born with cataracts and maintain that the cataracts are formed after birth only. Other authors go so far as to maintain that all infantile cataracts are congenital. O. Becker, for instance, gave it as his opinion that pyramidal cataract is the result of an intra-uterine perforation of the cornea followed by an adhesion of the anterior pole of the lens to this membrane. Later on this adhesion disappears, but as its result we have a pyramidal cataract. This idea sounds plausible enough. However, if the corneal perforation was large enough to produce such important changes in the crystalline lens, why is it that we find the cornea in most of the cases of pyramidal cataract perfectly clear and no remaining scar on it. Ever since Becker gave this idea to the public I have especially looked for corneal scars in cases of pyramidal cataract and I have to see the first one yet. This does not argue well for Becker's explanation, although it has been adopted by Michel, Meyer and others.

It is true most cases of infantile cataract are seen at least several months after birth, and it is, therefore, hard to decide whether in a given case we have to deal with a congenital cataract or not. That children are sometimes born with cataract is an undeniable fact. I had myself once occasion to see a case of congenital total cataract in a baby twenty-four hours old. Such observations make it clear that there is such a thing as congenital cataract. Practically, it makes, however, no difference whether an infant was born with cataract, or whether a cataract begins to develop within some months or even a year after birth.

The term "congenital" cataract might, therefore, well be done away with, and in its stead we might best use the term "infantile" cataract, in contradiction to "juvenile" and "senile" cataract. Infantile cataracts would then include all forms of cataract found in the infant or being known to begin their development in the first year or so after birth.

What forms of infantile cataract are known? The infantile cataracts may be divided into two large groups, viz., the total and the partial ones.

The total cataracts in which the whole of the lens-substance is dim, may be soft or hard; a third form has been called membranous cataract or shrunken cataract. In this latter the softer contents have probably become absorbed by exosmosis. The remainder is usually a shriveled up capsule containing some, frequently very hard, dim lens-substance.

The partial cataracts also appear in different forms. In the pyramidal or anterior polar, a stationary form of cataract, we find a peculiar degeneration of the lens-substance at the anterior pole or very near it, projecting teet-like into the anterior chamber. Zonular cataract is that form in which one, two or more layers of the lens-substance are dim which lie intermediately between the transparent most superficial layers and the nucleus. The nucleus may have the normal consistency or be very hard. This form of cataract is mostly stationary. In a number of cases, however, such zonular cataracts are progressive. The so-called posterior polar cataract does not seem to be in reality a cataract, that is, a dimness of the lens-substance, but to consist of remnants of the hyaloid artery attached to the posterior lens-capsule.

What is the etiology of infantile cataracts? The different authorities differ with regard to the causes of infantile cataract. It has been found by Arlt that many infants with cataract have been subject to spasms. However, Foerster and others think that zonular cataract is of rhachitic origin. McNamara says zonular cataract most frequently depends on hereditary syphilis. I have seen a brother and sister affected the one with zonular, the other with total cataracts, whose father and mother were first cousins. Becker, as stated above, thinks that anterior polar cataracts are due to an anterior synechia between lens-capsule and cornea. The cases of infantile cataract I have had occasion to see have not cleared up anything with regard to their etiology. But I am inclined to

think that McNamara's view surely is not a correct one, since I never found hereditary syphilis in any of my cases. Maybe, that such an affection might have been found to have existed in the grand-parents or even farther removed, if the family history of all the cases were thoroughly known. Direct evidence was surely wanting in my cases. Signs of rhachitis were present in some, a few had had spasms, but in the majority of them no cause could be directly demonstrated.

When are the cases of infantile cataract operable? This question is very simply answered when the patients are old enough to help in the examination of their visual sense. In small infants and especially in total cataracts it may be a very hard thing to decide whether a case is operable with any prospect of sight or not. The smallest evidence of perception of light would, of course, invite an operation. Yet, we know that in a certain percentage of these cases the cataract is not the only pathological condition found in the eye. In spite of these considerations, however, I am of the opinion that, as long as no visible complication exists which *a priori* forbids us to operate, we should operate on every case of infantile cataract, the chances for improvement being infinitely greater than those for the reverse. Even when no perception of light can be proven before the operation, some degree of vision may be established by the operation, and should really nothing be gained, what is likely to be lost?

At what time should we operate? Since I strongly believe in an *amblyopia ex anopsia*, I should always operate as soon as possible. This means, that given the opportunity in an otherwise healthy baby, with a total cataract, I should operate even after the first three months of life. Parents are, however, not likely to consent so early. In cases of stationary partial cataract we may well wait until the patient has attained such an age, that with his help we are enabled to form a distinct opinion with regard to the conditions before us. Yet, I think we should not hesitate a moment longer than necessary, since we lose valuable time and, perhaps, not only a decided influence upon the child's sight, but also upon its character and thus upon its whole future.

What kind of operation is to be performed? The forms of operation which to-day we may consider in cases of infantile cataracts are three, viz., extraction, discission and iridectomy. The cases of infantile cataract in which it is practicable or imperative to perform extraction of the cataract are but few, and primarily this only concerns the cases of total cataracts. But I would like to reduce their number still further. I think it is unnecessary to perform extraction, except in cases of shrunken cataracts. Even the hard total cataracts which are usually extracted will give way to discission. Although in the extraction of infantile cataracts it is but seldom necessary to make an iridectomy, yet this may become necessary against our wish, and on the other hand the corneal section, aside from the probable astigmatism, exposes the eye to graver dangers than the operation of discission. In the latter operation with the necessary care we have the iris intact and have, when all is done, a round, moveable pupil (excepting cases combined with congenital coloboma). While in the different forms of total cataract we have to decide between extraction and discission, in the different forms of partial cataract our choice lies between iridectomy and discission. The merits of these two methods of operation in cases of zonular and anterior polar cataracts have been so often and so ably discussed that it is not necessary here to repeat the whole chapter. My experience from my own cases and cases which a saw operated upon by others or after operations by others, is that the percentage of cases in which iridectomy is of a practical value is almost *nil*. Theoretically considered, I should, as others do, give iridectomy the preference in all cases in which sight is considerably improved by a dilatation of the pupil *ad maximum*. Practically, I have found, as others undoubtedly have, that the result of such operations, as a rule, does not come up to our expectations. Herein I know I differ with most of the text-books. But I have had occasion to needle cases in my practice after I or some other surgeon had from theoretical reasons performed iridectomy, and where the result of the division was by far superior even to the iridectomies performed by the most skillful

operators. While, therefore, with most surgeons it seems to be the rule in cases of partial cataract to perform iridectomy, with me it has been the rule to perform discission and to repeat it until the best possible result is obtained. True, even discission has its dangers. Yet, I do not think many will have such bad luck with discission as has been reported in one unfortunate case in which iridectomy for zonular cataract was followed by the loss of both eyes. The results of discission with regard to vision are, I think, very considerably superior those of iridectomy in the great majority of the cases.

In the following I append a short description of 37 operations performed on 26 patients for infantile cataract.

1. E. M., æt. 27, progressive zonular cataract both. Myopia. Discission R. Hard nucleus removed by extraction to gain time. Result good.

2. F. A., æt. 23. Zonular cataract both. Pupil in blind school. Discission both. Result, $V=^{20}_{/1xx}$ R., $^{20}_{/1}$ L.

3. L. McD., æt. 21. Had zonular cataract. L. was operated upon by some other surgeon and lost by suppuration. R. totally blind for 5 years. Pupil of blind school. Eye soft, now total cataract and posterior synechiæ. Preliminary iridectomy. Extraction. Result first very poor, 6 months later very good.

4. T. S., æt. 20. Zonular cataract both, progressive. Can no longer earn his living. Discission. Result, R. $^{20}_{/c}$, L. $^{20}_{/1xx}$.

5. A. B., æt. 19. Zonular cataract. Discission L. Result, $V=^{20}_{/1}$.

6. L. F., æt. 18. Partly shrunken cataracts, both. Pupil of blind school. Discission both. Result but poor.

7. F. M., æt. 16. Zonular cataract both. Discission L. Result, $^{20}_{/1}$.

8. L. T., æt. 16. Pupil of blind school. Micro-cornea, microphthalmus. Anterior polar cataract both. Discission. Result, no improvement. Fingers at 5 feet.

9. L. W., pupil of blind school. Shrunken cataract both.

R. extraction. Result, $V=^{20}/_{1xx}$. L. Discission. No improvement.

H. D., æt. 14. Pupil of blind school. Cataracta mollis totalis both. Discission. No improvement. Atrophic optic nerves.

11. E. S., æt. 10. Zonular cataracts both. Discission L. Result, only slight improvement at first. Later on, considerably better.

12. K. M., æt. 14. Cataracta zonularis both. Discission R. Result, $V=^{20}/_{x1}$.

13. F. E., æt. 15. Zonular cataract both. Discission L. Result $V=^{20}/_{.}$.

14. L. B., æt. 12. Zonular cataract both. Discission R. Iritis, posterior synechia. Extraction of nucleus. Result, $V=^{20}/_{1xx}$.

15. Ph. T., æt. 15. Zonular cataract both. Discission L. Glaucomatous symptoms relieved by leeches. Result, $V=^{20}/_{xxx}$.

16. E. S., æt. 9. Zonular cataracts both. Discission L. Result, $V=^{20}/_{xxx}$.

17. M. J., æt. 11. Pupil of blind school. Cataracta mollis fere totalis both. Discission. Result good.

18. M. J., æt. 9. Pupil of blind school. Cataracta mollis fere totalis both. Sister of former (colored). Discission. Result good.

19. L. B., æt. 1. Zonular cataract both. Exquisitely rhachitic. Discission both. Result, $^{20}/_{30}$ both.

20. J. M., æt. 7. Total cataract both. Discission R. Result, $V=^{20}/_{.}$.

21. E. B., æt. 3. Total cataract both. Discission L. Result tested two years later, $^{20}/_{1xx}$.

22. P. B., æt. 2. Total cataract both. Discission R. Result good.

23. E. B., æt. 4. Total cataract both. Paralytic in lower limbs. Intelligence below par. Discission both. Result good.

24. P. C., æt. $1\frac{1}{2}$. R. shrunken cataract. Extraction. L. cataracta zonularis. Discission. Result good.

25. E. B., æt. 7. Cataracta totalis both. Discission R. Result, sight at first very poor. A year later $\frac{20}{1}$.

26. L. S., $1\frac{1}{2}$. Cataracta totalis fere matura R. Discission. Result good. L. so far free from cataract.

From the foregoing it will be seen that of the 26 patients 13 had zonular cataract in both eyes; 10 had total cataract (2 shrunken) in both eyes; 1 had pyramidal cataract in both eyes; 1 had a shrunken cataract in one and a zonular in the other eye; 1 had a total cataract in one eye alone.

A RARE FORM OF OPHTHALMIA GRANULOSA ASSOCIATED WITH ICHTHYOSIS.

BY F. BULLER, M. D., MONTREAL, CANADA.

It is, I believe, a generally recognized fact that certain cutaneous eruptions or morbid conditions are also met with on the conjunctiva. Eczema, pemphigus, lupus, lepra and epithelioma, have all been seen either as primary affections of the conjunctiva, or associated with similar conditions elsewhere. The comparative immunity of the conjunctiva from participating in diseases of the general integument would however be somewhat remarkable were it not for the obvious anatomical and functional differences between these two structures, circumstances which of themselves must materially modify any influence that tends to induce pathological changes in these parts.

The concurrence of certain well marked and characteristic changes in tissues or structures that have no direct connection with each other, except that they are mutually dependant on the same nutritive processes, is a matter of daily observation, and I only allude to it as bearing on the pathology of the two cases I am about to present, both of which are the subjects of skin disease known as ichthyosis.

The affection of the conjunctiva is identical in each so that one description will serve for both; but there are certain differences in their general condition which must be referred to separately.

The first case is that of a boy aged 15 who has had several attacks of rheumatism and whom I treated two years ago for chronic iritis, from which he made a perfect recovery after some four months' treatment. I did not at that time notice any disease of the conjunctiva, though I have little doubt that such existed even then. Six months later he was again brought to

me on account of not being able to use the eyes without discomfort. An inspection of the eyelids then revealed the changes presently to be described.

He is the son of healthy parents, neither of whom have ever had any disease of the skin, four of their children are equally free from the same; but this boy and two of his younger brothers present that peculiar rough and scaly condition of the skin of the legs and arms which belongs to mild forms of ichthyosis. The skin is everywhere dry and harsh, the normal skin-lines especially of the hands are considerably exaggerated. In all three the changes are almost precisely similar but rather more conspicuous in one of the younger brothers than in the patient.

They are all alike in being worse in the winter than during the summer. In early infancy they suffered from acute eczema, but for several years afterwards the mother, an educated and observant lady, states positively there was no evidence of skin disease, the present condition having developed gradually several years after birth.

In the winter season the skin of the face has a harsh, stiff appearance and is more or less scaly, and there is a scaly and somewhat reddened condition of the edges of the eyelids.

The second case is that of a boy 11 years of age, whose father has been subject to "salt rheum" for many years. Two of his brothers are similarly affected, but the mother is a robust healthy woman.

This child suffered much from acute eczema during the first year of his life and has had several attacks since. His skin has never been really healthy in appearance, and for some years there has been an increasing accumulation of epidermic masses on certain parts of the extremities. The skin generally is harsh and rough, and its normal lines are everywhere increased; about the knees and elbows there is an enormous quantity of dark colored epidermis subdivided by minute fissures in innumerable polygonal areas. This condition exists to some extent on the flexor aspect of the elbows. The skin affection is said to be even more conspicuous in the winter than in the

summer season. The integument of the face is coarse looking, tense and somewhat scaly, and there is a good deal of exfoliating epithelium on the scalp. The edges of the eyelids are slightly reddened, and there is a considerable quantity of dry epithelium about the roots of the eyelashes. The boy is well developed, and in other respects enjoys excellent health.

For two or three years at least the boy has been known to have weak eyes; all the other members of the family are said to be free from any such weakness. During the past month or thereabouts, the eyes are said to have been weaker than usual, and there is a moderate intolerance of light. Beyond a perceptible hyperæmia of the ocular conjunctiva and a slight drooping of the eyelids there is nothing abnormal in the external appearance of the eyes. Under atropine there is compound hyperopic astigmatism $= +1.50 \text{ s} \subset +2.50 \text{ c}$, $V = \frac{20}{xx}$.

The conjunctiva of the lower lids is somewhat swollen, has a smooth and rather glazed appearance, and presents several longitudinal ridges, without any of the rounded bodies of follicular conjunctivitis or of trachoma. A long string of pale yellow, extremely tenacious mucus, occupies the lower retrotarsal fold.

On everting the upper eyelids the palpebral conjunctiva appears remarkably pale and also glazed or as if varnished. The pallor is that of a greyish faded pink, with a more pronounced pink at the ends of the lids and along the posterior border of the tarsus.

The palpebral surface is somewhat more extensive than normal, and the entire eyelid perceptibly thickened. The conjunctival surface, though smooth, has a remarkably uneven appearance, owing to the presence of large numbers of flattened elevations which are separated from each other by narrow fissures. These elevations are quite irregular both in size and shape, varying from one to two millimeters in diameter; the larger and more rounded ones are at the posterior border of the tarsus, though even here their surfaces are distinctly flattened. Some, like minute mushrooms, are considerably broader at the surface than at their attached portion. Under a

strong magnifying glass they all appear semi-transparent, almost gelatinous, and their faint red tinge is seen to be due to innumerable minute rusty red dots scattered throughout their substance; these dots are undoubtedly fine capillary loops, since they become larger and more numerous when the part is irritated by friction. But their most striking characteristic is their extreme hardness; when incised strong pressure between the thumb nails fails to make the slightest impression on any but a few of the redder ones near the posterior edge of the tarsus. Some of the latter I succeeded in crushing in this way.

Two of the largest, near the posterior edge of the tarsus were removed for microscopical examination. Sections made through these unfortunately did not demonstrate the condition of the epithelium or its relation with the underlying structures. They did, however, clearly show that the excised granulations were made up of highly developed granulation tissue, containing a very large proportion of white fibrous tissue in the form of wavy bands, and in parts the cellular elements preponderating. Vertical sections showed an abundance of this tissue in the superficial as well as the deeper portion of the granulations. While the general characters of these structures correspond to that of ordinary trachoma their connective tissue elements were greatly in excess, as might have been predicted from the microscopical features already mentioned.

No microscopical examination was made of the first case, but it was in all respects so nearly the counterpart of the one examined, that I have no reason to doubt the granulations would have been found identical in their minute structure had such an examination been made in both. In the second case no special treatment was prescribed, but in the first various remedies known to be efficacious in the treatment of trachoma (especially the sulphate of copper) were tried faithfully for nearly a year; but without the slightest perceptible benefit, as far as the size and number of the granulations, or the appearance of the conjunctiva was concerned.

I have, among hospital patients, several times seen cases of trachoma precisely similar to these and always equally rebel-

lions to treatment, but I do not remember ever having examined the state of the general integument in any of these, and am therefore unable to say whether any chronic skin disease was associated with these also.

It is very evident, however, that the two cases I have just described differ widely from the ordinary forms of trachoma.

1. They differ in the form, size and color of the granulations and especially in the extreme hardness of these structures.

2. In the absence of any tendency to the inflammatory exacerbations, the first case, though under observation for more than a year, never at any time showed any change in the condition of the conjunctiva. The second case, though evidently of several years duration, had never at any time shown the least tendency to acute exacerbations, nevertheless it had already arrived at what would under ordinary circumstances be regarded as a very advanced stage of the disease.

3. The first case differed from ordinary trachoma in its absolutely passive behavior under ordinary treatment.

4. The character of the secretion was not that of any ordinary form of trachoma, but rather such as we sometimes see in commencing parenchymatous xerosis. But in these cases atrophy of the conjunctiva was not a conspicuous symptom. Indeed the retrotarsal folds and fornix were almost healthy in appearance.

5. That they were non-contagious is almost certain.

The pathological changes, it will be seen, were confined chiefly to the palpebral conjunctiva of the upper eyelids. Now this is just the part of the conjunctiva that in its anatomical structure bears the greatest resemblance to the general integument, which we have seen was also subject to certain chronic changes analogous to those in the conjunctiva. If, as seems probable, the conditions really depend on the same error in the state of general nutrition, they may, on taking the above facts into consideration, be regarded as identical in all respects excepting in situation.

For this peculiar form of trachoma then we might perhaps

be justified in employing the designation ichthyosis of the conjunctiva.

The obvious relation, which these cases seem to indicate, of eczema and ichthyosis naturally suggests a question in pathology which we may leave to the dermatologists for answer.

ON A NEEDED REFORM IN VISUAL RECORDS.

BY HAROLE B. WILSON M. D., ANN ARBOR, MICH.

Common factions are either a necessity or a nuisance. If they are a necessary part of our case records, we must stand by them, if they are not, the sooner we are rid of them the better. The dioptric system has banished them from our refraction formulæ, and it only remains to eliminate them from our records of visual acuteness, to be completely quit with them. Indeed it is surprising that this reform has not already taken place. At present our books are burdened by such expressions as these: $V = \frac{6}{6}, \frac{15}{18}, \frac{20}{20}, \frac{20}{40}, \frac{1}{2}$, etc., to signify the ability of the eye to distinguish certain small objects at a distance. Normal vision is represented by $V = \frac{20}{xx}, \frac{6}{6}$ or sometimes by 1. Similarly $V = \frac{20}{30}, \frac{20}{40}$, etc. has been expressed by $V = \frac{2}{3}, \frac{1}{2}$, etc., and if we carry out the reduction in all cases, we get an irregular series of expressions difficult to correlate with each other, and always open to the objection of being common fractions. If we agree that these expressions when in their lowest terms, mean the same thing as when unreduced, a way is opened towards attaining a much desired simplicity, and of doing away with the objectionable features of numerator and denominator.

It is probably true that the ordinary expression $V = \frac{20}{40}$ does not strictly represent one-half of the normal visual power, if we consider this to range from the ability of the eye to distinguish the letters of Snellen No. 20, at twenty feet, to the lowest limits of qualitative vision, or to absolute blindness, if you will. There is a vastly greater difference between $V = \frac{20}{40}$, and $V = 0$ than between the former figure and $V = \frac{20}{20}$. For clinical purposes, however, it seems to be a safe assumption that visual acuity may be measured by the ratios between the heights of the smallest letters distinguished at a given distance from the

eye, and that these ratios may be expressed in terms of the series 1., 0.9, 0.8, 0.7, etc., 0.09, 0.08, etc., the intervals of which can be made to serve all necessary accuracy, and which is extensive enough for all practical demands. Thus, instead of writing $V = \frac{20}{20}, \frac{20}{40}, \frac{20}{100}, \frac{18}{200}, \frac{10}{200}$, etc., we may write $V = 1., 0.5, 0.2, .09, .05$, etc.

If a equals the height of the five minute letter for twenty feet, y , that of any other letter, and v the expression for visual acuity, then $y = \frac{a}{v}$ expresses their relation, and since the height

of the letters is proportional to the farthest distance at which they can be distinguished (when the letters have an equal height and breadth,) the same values of v substituted in $x = \frac{20}{v}$ will give x which is the number of feet these letters with the height y , can be read. Thus, if normal vision can distinguish letters .3491 inches high at twenty feet, at 22.2 ft., 25 ft., 28.6 ft., 33.3 ft., 40 ft., 50 ft., etc., they would have to be approximately .35 in., .39 in., .44 in., .5 in., .58 in., .87 in., etc., high respectively, to be seen, and if we construct a plate of test type from these letters, they will serve to measure the visual sense, so that it can be expressed as 1, 0.9, 0.8, 0.7, 0.6, 0.5, 0.4, etc. If the first few intervals of the series are too close, some of them, such as 0.9 and 0.7, may be omitted, and similarly if the gap between 0.2 and 0.3, is too great, we may insert the value of 0.25.

Now accurately and properly to carry out the plan I have proposed, involves the construction of a new series of test type, but in default of this, the ordinary Snellen plate may be used without much inaccuracy, the numbers corresponding to the new values of V , as follows:

Snellen No.,	-	-	XX	XXX	XL	L	LXX	C	CC
Visual acuity,	-	-	I.	0.7—	0.5	0.4	0.3—	0.2	0.1

For values less than 0.1, the patient moves toward the test type, and we have $V = \frac{18}{200} = 0.09$ etc.

The advantages accruing from adopting the decimal notation in the visual record will be the simplicity of its form, and

the harmony and correlation between its various expressions, and no violent revolution of any sort is necessary to carry it into effect. If it is desirable to use the meter unit instead of the foot, and to consider six meters instead of twenty feet as infinite distance, the figures given above will be altered, but the usefulness of the principle involved will not be impaired, nor its adoption in any degree more difficult.

For near vision, the present system is perhaps the most convenient, particularly since reading tests are usually approximate estimations only; but were it is desirable to effect a change here, the records could be cast into a decimal notation in a manner similar to that used for the far point.

Further than this, the proposition explains, and I trust, commends itself.

TWO CASES OF ACUTE CHEMOSIS OF THE CONJUNCTIVA.

BY G. E. DE SCHWEINITZ, M. D.

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Zehender (*Klin. Monatsbl. f. Augenheilk.*, June, 1870), under the title of "Acutes Bindehautödem", records the case of a patient 55 years of age, convalescing from pneumonia, who, after a day of headache and catarrh, had chemosis of the conjunctiva looking like a bladder. Six days later this had entirely disappeared from both eyes. Dr. Swan M. Burnett (*Archiv. of Ophthalmology*, vol 9, p. 157) has recorded an example of this affection which occurred in a man aged 29, a student of great activity. The eyes were emmetropic. In the periphery of each fundus there were spots of atrophic choroiditis, and in the right eye near the macula a few pigment spots. Quinine and coquilles were ordered. Three days later Dr. Burnett was sent for because, on the previous evening, the patient was seized with intolerable pain in the left eye and left side of the head, which had lasted through the night. The eyes were sensitive to light, but there was no especial injection of the conjunctiva. On the following day there was marked chemosis of the conjunctiva, two days later the symptoms had subsided, and at the expiration of a week the eyes were in a very satisfactory condition.

Recently two cases of sudden, acute chemosis have come under my observation, and for various reasons their brief record seems valuable.

CASE I.—Jas. M., aged 40, was an inmate of the venereal wards of the Philadelphia hospital. He was the subject of syphilis in its later manifestations, the active lesion being a

large ulcer over the centre of the right tibia. The patient had for some time been taking ascending doses of iodide of potash and was at this time using one drachm three times a day. For a day before his admission to the eye-ward, he had severe pain in the eyes and head and slight pericorneal injection. The resident physician, thinking he had to deal with a case of incipient iritis, instilled a drop of atropine solution and sent him to the eye-ward. The following day there was intense chemosis of the right conjunctiva, which surrounded the cornea in a large roll, and fairly protruded through the palpebral fissure. The intolerable pain continued so that an artificial leech was applied to the temple. During the day a similar state of affairs developed in the left eye. The iodide of potash was discontinued, the eyes occasionally washed with a saturated solution of boracic acid, and the swollen conjunctiva touched with an alum crystal. During the next twenty-four hours the swelling disappeared as quickly and quietly as it had appeared. For a few days after its subsidence the conjunctiva remained hyperæmic. There was nothing noteworthy in the fundus of either eye.

CASE II.—Chas. M., aged 35, came to the eye wards because of very imperfect vision and intense head pains. Acuity of vision was reduced to counting fingers in each eye. The ophthalmoscope showed a beautiful picture of symmetrical disseminated choroiditis with string-like opacities in the vitreous. The man had contracted the initial lesion of syphilis ten years previously. As he was well nourished and in apparent good form he was placed on inunctions of mercurial ointment, one drachm night and morning, and given full doses of bromide of potash at night. The sight slightly improved but the headache continued. The bromide was then discontinued and fifteen grain doses of antipyrine substituted, which acted very happily. At the expiration of one week the mercury was stopped and the man put upon ascending doses of iodide of potash, beginning with thirty grains, three times a day. This was increased until he was taking three drachms a day. One evening he had a severe head-pain accompanied by slight irritation in and

around the eye. The next morning there was enormous chemosis of the conjunctiva, which was literally piled up and bulging through the fissure of the lids, with a crater-like excavation, at the bottom of which could be seen the cornea. The right eye was first and more decidedly affected than the left. The iodide of potash was discontinued, a saline purge ordered, and no local treatment, except an occasional washing with boric acid solution, instituted. In twenty-four hours the swelling had much diminished, and in two days more had practically disappeared. No similar attack had ever occurred to the patient in his previous history.

Dr. Burnett in his article discusses the usual causes of chemosis, namely, such as are active, where there is inflammation of the uveal tract or of the conjunctiva, and such as are passive where the fluid exudes passively, as in the ordinary cases of œdema from relaxed walls. He concluded that neither of this class of causes was predominantly present in his case, and looked upon neuralgia of the fifth pair as the exciting agent which had produced an hyperæmia of the conjunctiva that the diseased condition of the choroidal virus was unable to contend with, and chemosis resulted. This very satisfactory explanation applies with equal force to the cases I have just briefly recorded. A specific neuralgia of the fifth pair, associated in the one instance with extensive disease of the vitreous and choroid, will certainly suffice to explain the chemosis, especially in the light of the fact that neither active nor passive causes of this condition were notably present. The association of chemosis with paralysis of one or more of the eye-muscles must not be lost sight of, but such palsy, although a most likely condition in either of the cases, did not exist. Another possible explanation in the present instances is worthy of consideration, and for this reason in part they have been reported. Both of the men were under the influence of large, even if they were not unusual doses, of iodide of potash; in both of them the swelling of the conjunctiva subsided when this remedy was discontinued. The ordinary symptoms of iodism are familiar enough. Varieties known as the gastro-

intestinal, the nervous, and the iodic cachexia have been described (Bull. de l'Acad. Roy., XXV. quoted by Wood. Therapeutics 5th Edit.)

Cases in which extensive and dangerous cutaneous eruptions accompanied by stupor, and such in which death itself has ensued are on record. Iodide of potash is probably eliminated by all the mucous membranes, and quite certainly with the lachrymal secretion, as witness the disastrous results which occasionally follow the dusting of calomel into the conjunctival cul-de-sac of the patients under the influence of this drug. Hence it does not seem unreasonable to assume that this chemosis may have been a manifestation of iodism or rather may have been provoked into existence by the elimination of the remedy from the conjunctiva or with the tears, exactly as continued doses of arsenic produce œdema of the tissues about the eyes owing to the presence of a low-grade cellulitis which fills the connective tissue lymph-spaces with serum. Against this theory is the fact that the chemosis subsided before the system had time to throw off the accumulated drug, inasmuch as the elimination of iodide of potash takes place slowly. Although not entirely apropos I wish to call attention to the relief which antipyrine gave to one of these patients, in that it distinctly alleviated the suffering caused by severe syphilitic headache, when the bromides in conjunction with the specific treatment had signally failed.

EYE CLINIC.

BY W. CHEATHAM, M.D.,

Lecturer on Diseases of Eye, Ear, Throat and Nose, University of Louisville, Ky

An obstinate case of mydriasis. Jessie B., aged 10, had been suffering from asthenopia with blephoritis marginalis for some months. When she came to me she had an acute muco-purulent conjunctivitis. I advised atropia sulph. gr. ss. to aqua $\frac{3}{4}$ ss., to be dropped into each eye four times a day. The father supposing sometimes that the drop did not get in well would repeat it; so she may have gotten the drop in each eye six times a day. The atropia was used in this way for one week. When there was no indication of a return of the pupil to its normal size for two weeks, and no return of accommodation, I became alarmed. I used pilocarpine and eserine, either of which would bring the pupil down but little, and retain it there a very short time. Electricity was used also. One day after the mydriasis had existed four weeks the pupils were natural in size, and accommodation was restored. The following day the mydriasis and paralysis of accommodation were again present. There was no indication of any central trouble, no symptoms of locomotor ataxia, and nothing to indicate any reflex cause. Notwithstanding all treatment, the trouble was not relieved up to the seventh week after the drops were used. The mother then suggested an old household remedy for worms. The patient had taken it before with benefit for other troubles, insomnia, etc. The pink root and senna were given until it purged the patient pretty well. After the third or fourth dose accommodation returned, and the mydriasis disappeared. This has been three months ago, and the patient is still well. No medicine that would produce mydriasis was given internally, and the drops that were used

in the eyes after the atropia was used, were in new bottles, and new droppers were used.

Miss F., aged 21, has had asthenopia for several years. Print runs together after reading a short time.

V. R. = $\frac{20}{xxx}$. No improvement with glasses.

V. L. = $\frac{20}{xx}$. Em. Ocular conjunctiva always congested. Some hyperæmia of conjunctiva. As usual in such young subjects, I put one drop of a solution of hydrobromate of homatropia gr. j, aquae ʒj, in each eye every ten minutes until it is put in six times, and then wait half an hour before testing vision again. At the end of the half hour I found ocular conjunctiva very much congested, much more so (which is not unusual) than before the drops were used. I found vision of each eye $\frac{20}{x1}$ only and no improvement with glasses. I put the homatropia in twice more, which still further decreased vision. The ophthalmoscope showed some disturbance of the corneal epithelium, or of some part of the anterior layers of the cornea.

I now put in two drops of a 4 per cent. solution of benzoyl, meth. ecgonin muriate, which soon cleared up all of the conjunctival congestion, and also the vision. The cocaine is said to and does if used several times in a short space of time, corrugate the corneal epithelium. I found in this case that it cleared up the cornea, and I had no difficulty in finding my patient had a small degree of Ah. In the last few days I have had a case like the last which behaved the same way with the homatropine and cocaine.

Four weeks ago I had a rather unusual case of myopia in a child three years old. The parents had observed that the little one did not see very well. Of course none of the usual tests for vision could be made. Atropia was used and accommodation paralyzed. The ophthalmoscope showed myopia of $\frac{1}{3}$. I never before saw a patient so young with such a high degree of myopia.

I have lately had two cases of gonorrhœal ophthalmia which interested me very much. One in a child six months old of an excellent family. It had been going on for six weeks.

There was great œdema of lids, with chemosis, and the right cornea was beginning to be involved. The next case was in a colored child three years old. I saw it the third day of the attack. Chemosis and œdema of lids were so great as to render a view of the cornea impossible. They were both on hand at the same time, and both were treated exactly alike. In all suppurative inflammations of the conjunctiva my dependence is on the nitrate of silver; I use it from gr. $\frac{1}{4}$ to ℥j to aquae ℥j, being very careful to use the salt water well afterwards. When the stronger solutions are used, I apply them myself; I have yet to see an eye stained by the use of the silver, or an eye lost when they are seen in time. In the first case spoken of, there is left a small, slightly opaque spot that can be scarcely seen by a strong light. The treatment I pursue, I suppose, has nothing new in it; cleansing and good nursing doing most of the work. In these two cases I advised cleansing every hour with surgical cotton and carbolized water. The lids to be kept well anointed with vaseline cerate to prevent excoriation of the skin. While the chemosis and œdema existed, and if much reaction followed the applications of the silver, hot cloths were applied an hour, then left off an hour. The other treatment is as follows: There is always great difficulty in cleansing the cul-de-sac, especially when there is much chemosis and œdema of lids. I have tried peroxide of hydrogen, but with no good result. I have found the glycerole-tannin ℥j, aquae ℥vj the best for the purpose. Besides its effect upon the disease, it coagulates the pus and muco-pus, so it will come out in strings, leaving none behind. This I order done four times a day if the weak solutions of nitrate of silver are used; if the stronger I use it myself twice a day. In the two cases referred to I commenced on a 1 gr. solution of the silver, increasing it slowly, as I found the disease would not yield, until in the first case I used gr. x to aquae ℥j, and several times in the second case gr. xl to aquae ℥j, dropped in the eye. As the disease appears to be under control, I decrease the strength of the solution slowly, but always wash out well afterwards with salt water. I have never

done a canthotomy in this disease. Have never found it necessary to do any cutting whatever, except in some cases where there are extensive marginal ulcers, I performed peracentesis of the cornea, and can now recall but one case, a woman, 35 years old, in which this was necessary. I use atropia in most all the cases, eserine when indicated. Cocaine never, because of its increasing the dangers to the cornea. I report these two cases because they were typical ones and because it is so unusual for me to see the disease in patients of that age. Dr. Weeks in his late article in the *Archives of Ophthalmology* puts nitrate of silver where I have always thought it should be, only second to hydrarg. bichlor. as an antiseptic.

TRANSLATION.

[Extracts from the Report of the Meeting of the Italian Ophthalmological Society at Turin. From *Hirschberg's Centralblatt*.]

PRESIDENT REYMOND.

Peschel presented a boy, fifteen years of age, with an idiopathic pulsating exophthalmus on the left side. Five months previously, after nine days of digital compression with no success, the carotis communis had been ligated. Although a considerable improvement resulted therefrom, yet there is still some pulsation and protrusion of the eyeball, aneurysmatic noise, slight ptosis, and paresis of the abducens muscle and hyperæmia of the optic papilla and retina. $V=^{10}/_{xxx}$. A pulsating bloodvessel may be felt in the region of the incisura supraorbitalis. By exclusion of other possible affections the diagnosis of rupture of the carotis interna within the cavernous sinus is made. With regard to the etiology it may be interesting that the patient has frequently palpitations of the heart without an organic lesion.

Angelucci has seen a case of exophthalmus without pulsation, in which he made the diagnosis of angioma cavernosum. In this case there existed also a considerable nervous irritability of the heart.

Gradenigo thinks that a simple aneurysm of the carotis interna within the cavernous sinus can produce the symptoms of a pulsating exophthalmus and that in this way the papillitis and venous hyperæmia of the fundus oculi may be explained.

Angelucci opposes this view since not even a thrombosis of the vena centralis retinae is capable of producing a venous stasis in the retina. He is of the opinion that the pulsating exophthalmus is caused by an arterio-venous aneurysm in the

orbit, in the formation of which one of the larger branches of the ophthalmic artery takes part. He further thinks that a simple aneurysm of the internal carotid within the cavernous sinus does not produce any symptoms.

Peschel answers that in his case it is impossible to assume a simple aneurysm of the carotid within the cavernous sinus; that such an aneurysm would only produce a pulsating exophthalmus when developing rapidly and that the pulsations at once disappear when collateral venous circulation becomes re-established. This is the reason that slowly developing aneurysms or tumors within the sinus produce no symptoms in the orbit. He also draws attention to the fact that arterio-venous aneurysms have been repeatedly found at post-mortem examinations.

Peschel presented a girl, 28 years old, suffering from quinine amaurosis. On account of a slight catarrhal pharyngitis nine months ago she took only from 3 to 4 grains of sulphate of quinine in 6 days. This was followed by blindness and deafness. Five days later a certain degree of vision was re-established, but there was color-blindness and a high degree of contraction of the visual field. The latter was in both eyes a vertical oval around the point of fixation. High degree of ischæmia of the fundus oculi. At present there is still a considerable contraction of arteries and veins. The arteries are accompanied by white lines, slight atrophy of the optic nerve and in accord with this the field for white and green is more contracted than for blue. Central acuity of vision normal.

Gradenigo is astonished at the smallness of the dose of quinine and considers this a true case of idiosyncrasy. He has seen similar cases, but they were all due to large doses of quinine.

Bono thought the visual fields rather denoted a hysteric amaurosis.

Peschel explained that the ophthalmoscopic picture positively excluded the idea of a hysteric amaurosis, and says his case is

perfectly typical and identical with others previously described.

Angelucci says the visual fields in the case do not point to a hysterical amaurosis because the field for blue would have to be the smallest. He reproached *Peschel* for not having examined the field for violet.

Rosimini recommended large protective spectacles of glass for the working glasses, which are exposed to superficial injuries to the cornea from foreign bodies. He further shows small glass shells, similar to glass eyes, which, following *de Wecker*, he inserts into the conjunctival sac after dissection in cases of symblepharon.

Devincentiis states that this method is very old, but has not stood the test of time.

Gradenigo even thinks that the irritation from such a foreign body would cause the formation of symblepharon.

Rosimini recommends to brush the trachomatous conjunctiva with sublimate solutions and says this acts like a charm.

Bono has seen little good from sublimate and prefers nitrate of silver and sulphate of copper.

Devincentiis and *Angelucci* have seen good results from brushing sublimate (1 in 400) on the conjunctiva in cases of acute trachoma and in pannus; but none in old organized granulations.

Secondi recommends the artificial ripening of cataracts according to *Foerster's* method, which has always given him good results. During the last year he has matured 18 cases in this manner, one of them was a case of posterior polar cataract with beginning cortical cataract and myopia. He has not tried to ripen zonular cataracts. He extracts three or four weeks after.

Reymond has once tried *Foerster's* method in a case of zonular cataract, but without success.

Tartuferi and *Balbiano* have found that when the muriate of cocaine is dissolved in a solution of bichloride of mercury (1 in 5,000) a double salt is precipitated which is but little soluble in water. This salt, according to their numerous experiments with threads infected with micro-organisms, has but little antiseptic value, its anæsthetic action is very small and it irritates the conjunctiva.

Gradenigo shows and recommends his electric spectacles, which serve to constantly apply the galvanic current. The dry battery is carried in a case in the pocket, the conducting wires appear like the common cords attached to the eyeglasses.

Devincentiis removed a large cyst from the sclerotic, which reached to the lower margin of the cornea. Histologically, he found it lined with pavement epithelium in some, in other places with mixed epithelium. It seemed to have been caused by a burn.

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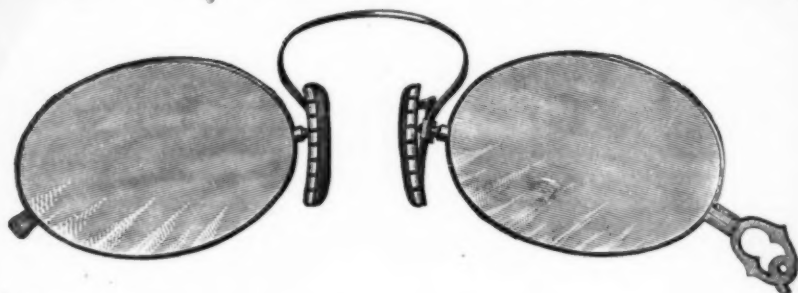
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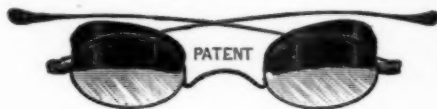
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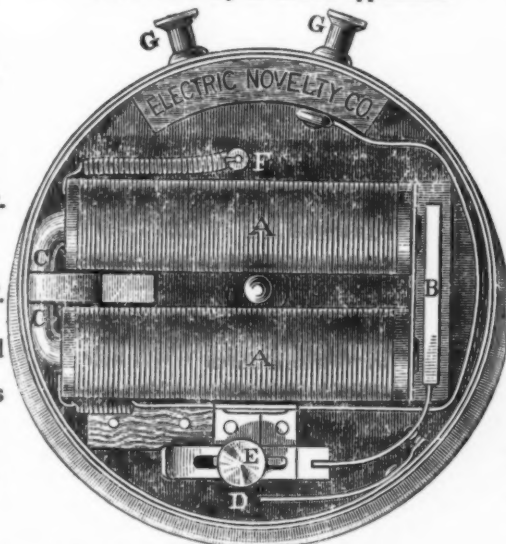
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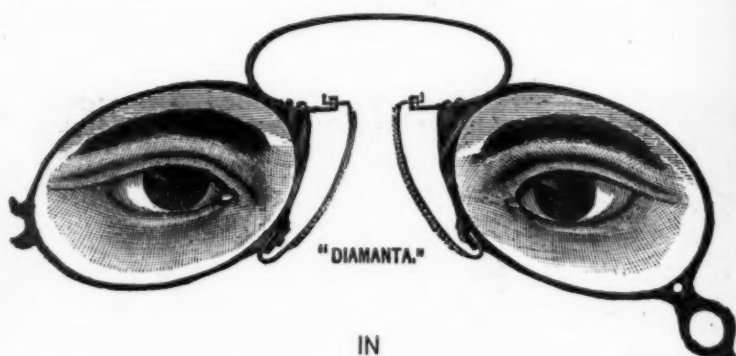
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